amendments to claims 1, 15, and 41 are supported in the specification at, *inter alia*, paragraphs 0005, 0006, 0009, and 0046. Accordingly, approval and acceptance are respectfully requested.

The Examiner is authorized to charge the extra claim fee of $54 (three dependent claims added) to deposit account no. 01-0481. Any other fees due or credits owed in connection with this paper may also be charged to said deposit account.

Section 103(a) Rejection of Claims 1-42

In the Office Action, claims 1-42 have been rejected under 35 U.S.C. § 103(a) (hereinafter "Section 103(a)") as being unpatentable over U.S. Patent No. 5,728,969 to Otani et al. (hereinafter "Otani") in view of U.S. Patent No. 4,705,582 to Aubert et al. (hereinafter "Aubert"), U.S. Patent No. 5,552,000 to Shepard, Jr. (hereinafter "Shepard"), and FR 465 082 (hereinafter "FR '082").

It is fundamental law that it is improper under Section 103(a) to use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fritch*, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). Teachings of references can be combined only if there is some suggestion or motivation to do so. *Smithkline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 886-87 (Fed. Cir. 1988). This burden of obviousness has not been met with regard to claims 1-42, and, therefore, this rejection is traversed.

Claims 1-14

The Examiner has failed to establish a *prima facie* case of obviousness against independent claim 1 of the present application because Otani, Aubert, Shepard, and FR '082, when taken alone or in combination, fail to teach or reasonably suggest a melt-pourable explosive composition comprising: 30 weight percent to 70 weight percent organic binder(s) selected from the group consisting of mononitro aromatics and dinitro aromatics, the organic binder(s) collectively exhibiting a total energy of detonation lower than trinitrotoluene and collectively having a total melting point in a range of 80°C to 115°C; 5 weight percent to 35 weight percent oxidizer(s); and 5 weight percent to 35 weight percent reactive metallic fuel(s), wherein the melt-pourable explosive composition becomes pourable and is remeltable into a pourable state in a range of 80°C to 115°C, as defined in claim 1.

Otani discloses granular or powder explosives comprising porous prilled ammonium nitrate and aromatic dinitro compounds. According to Otani, the porous prill ammonium nitrate "is used in an amount within the range of from 50 to 97% by weight, preferably from 70 to 95% by weight, based on the total explosive." *See* column 2, lines 40-45 of Otani. Because the ammonium nitrate is porous and present in such large concentrations of at least 50 weight percent, preferably 70 weight percent, the aromatic dinitro compounds are adsorbed into the porous prill ammonium nitrate. *See* column 2, lines 60-67.

Unlike the invention as set forth in claim 1, Otani's granular explosive composition does not contain oxidizer, *e.g.*, ammonium nitrate in Otani, in concentrations as low as 5 to 35 weight percent. Otani teaches using at least 50 weight percent ammonium nitrate. Otani teaches away from reducing this amount, stating instead that it is preferable to increase the ammonium nitrate concentration to at least 70 weight percent. It is believed that the reducing Otani's ammonium nitrate concentrations to the range recited in claim 1 of the present application might compromise Otani's ability to adsorb the aromatic dinitro compounds into the ammonium nitrate. Further, Otani's granular explosive material is not a melt-pourable explosive composition that becomes pourable and is remeltable into a pourable state in a range of 80°C to 115°C. Rather, Otani teaches that its prilled ammonium nitrate adsorbs the aromatic dinitro compound. As a consequence, reheating the granular explosive material of Otani to 80°C to 115°C will not transform the material back into a melt-pourable state.

Applicants further respectfully submit that none of the other applied art would have motivated a person having ordinary skill in the art at the time the invention was made to modify Otani to decrease its prilled ammonium nitrate concentration down to 35 weight percent, as set forth in claim 1. Applicants further respectfully submit that none of the other applied art would have motivated a person having ordinary skill in the art at the

time the invention was made to modify Otani to convert it from a granular product to a melt-pourable composition, as defined in claim 1.

Aubert relates to a melt-castable composition for casting or pouring into a mold or warhead. Castable and pourable compositions differ greatly in physical state from the granular material of Otani. While Otani seeks to adsorb its aromatic dinitro compounds into porous ammonium nitrate, the object of Aubert is to suspend additives such as ammonium nitrate and metals in a melt. Modifying Otani to use a lesser amount of inorganic oxidizer (so that the aromatic dinitro compound is not adsorbed into the porous ammonium nitrate), as the Examiner argues Aubert teaches, would have been contradictory to the express objects of Otani.

Shepherd similarly does not relate to the preparation of a porous explosive composition. To the contrary, Shepherd discloses an explosive composition derived from a non-aqueous unstable emulsion comprising first and second liquids and an emulsifier. The formation of an emulsion is contradictory to Otani's object of adsorbing the aromatic dinitro compound into the porous ammonium nitrate. Further, Shepherd does not mention the use of reactive metallic fuels or inorganic oxidizers. Given the substantial differences between Shepherd and Otani, Applicants respectfully submit that a person having ordinary skill in the art at the time the invention was made would not have been motivated to combined these applied U.S. patents in the manner suggested by the Examiner

The Examiner has asserted that FR '082 discloses that "variation of the various notoriously well known additives, amounts and so forth would have been obvious." *See* Office Action, page 2. But the Examiner has not pointed to any teaching in FR '082 that would have motivated a person of ordinary skill in the art to, *inter alia*, modify the amount of ammonium nitrate in Otani's composition to transform it from a porous composition to a melt-pourable composition as recited in the claims.

For all of these reasons, reconsideration and withdrawal of the Section 103(a) rejection of claim 1, and claim 2-14 and 43 which depend therefrom, are respectfully requested.

Claims 15-40

The Examiner has also failed to establish a *prima facie* case of obviousness against independent claim 15 of the present application because Otani, Aubert, Shepard, and FR '082, when taken alone or in combination, fail to teach or reasonably suggest a melt-pourable explosive composition comprising: 30 weight percent to 70 weight percent organic binder(s) selected from the group consisting of mononitro aromatics and dinitro aromatics, the organic binder(s) collectively exhibiting a total energy detonation lower than trinitrotoluene and collectively having a total melting point in a range of 80°C to 115°C; 5 weight percent to 35 weight percent inorganic oxidizer(s); and 5 weight percent to 35 weight percent reactive metallic fuel(s), wherein

the melt-pourable explosive composition becomes pourable and is remeltable into a pourable state in a range of 80°C to 115°C, as recited in claim 15.

Applicants respectfully submit that in view of the similarities in compositional components and ingredients recited in claims 1 and 15, the Section 103(a) rejection of claim 15 must fail for the reasons expressed above. As with the case of claim 1, claim 15 similarly recites that the composition comprises 5 weight percent to 35 weight percent oxidizer(s). Claim 15 further characterizes the oxidizer(s) as inorganic. Otani does not teach or reasonably suggest this low concentration of inorganic oxidizer. Further, to the extent that any of the secondary documents teach a lower inorganic oxidizer concentration than that of Otani, a person of ordinary skill in the art would have found these teachings contradictory to Otani's object of adsorbing the aromatic dinitro compounds into the porous ammonium nitrate for preparing a granular explosive.

For these reasons, Applicants respectfully request reconsideration and withdrawal of the Section 103(a) rejection of claim 15 and claims 16-40 and 44, which depend therefrom.

Claims 41 and 42

The Examiner has also failed to establish a *prima facie* case of obviousness against independent claim 41 of the present application because Otani, Aubert, Shepard, and FR '082, when taken alone or in combination, fail to teach or reasonably suggest a melt-pourable explosive composition

comprising: 30 weight percent to 70 weight percent organic binder(s) selected from the group consisting of mononitro aromatics and dinitro aromatics, the organic binder(s) collectively exhibiting a total energy detonation lower than trinitrotoluene and collectively having a total melting point in a range of 80°C to 115°C; 5 weight percent to 35 weight percent inorganic oxidizer(s); and 5 weight percent to 35 weight percent reactive metallic fuel(s), wherein the melt-pourable explosive composition becomes melt-pourable and is remeltable into a pourable state at 80°C to 115°C, undergoes an onset of thermal decomposition at a temperature that is at least 55.5°C higher than the temperature at which said melt-pourable explosive composition becomes pourable, and exhibits a card gap of less than 105, a dent depth in a range of 0.713 cm to 0.872 cm, and a total energy of detonation of 11.6 kJ/cc to 14.2 kJ/cc, as recited in claim 41.

Applicants respectfully submit that in view of the similarities in features, and in particular compositional components and concentrations, recited in claims 1 and 41, the Section 103(a) rejection of claim 41 must fail for the reasons expressed above. As with the case of claim 1, claim 41 similarly recites that the composition comprises 5 weight percent to 35 weight percent oxidizer(s). Claim 41 further characterizes the oxidizer as inorganic. Otani does not teach or reasonably suggest this low concentration of inorganic oxidizer. Further, to the extent that any of the secondary documents teach a lower inorganic oxidizer concentration than that of Otani,

a person of ordinary skill in the art would have found these teachings contradictory to Otani's object of adsorbing an aromatic dinitro compound into a high concentration of porous ammonium nitrate for preparing a granular explosive.

For these reasons, Applicants respectfully request reconsideration and withdrawal of the Section 103(a) rejection of claim 41 and claims 42 and 45, which depend therefrom.

Section 102(b)/103(a) Rejection of Claims 41 and 42

Claims 41-42 have been rejected under 35 U.S.C. 102 §(b) (hereinafter "Section 102(b)") as anticipated by or, in the alternative, under Section 103(a) as obvious over each of U.S. Patent No. 4,600,452 to Jessop et al., U.S. Patent No. 5,411,615 to Sumrail, U.S. Patent No. 5,529,649 to Lund, U.S. Patent No. 5,717,158 to Capellos et al., and U.S. Patent No. 5,949,016 to Baroody et al.

Applicants point out that claim 41 has been amended to recite the explosive composition with more specificity. As amended, claim 41 recites a composition comprising 30 weight percent to 70 weight percent organic binder(s) selected from the group consisting of mononitro aromatics and dinitro aromatics, the binder(s) collectively exhibiting a total energy detonation lower than trinitrotoluene and collectively having a total melting point in a range of 80°C to 115°C; 5 weight percent to 35 weight percent

inorganic oxidizer(s); and 5 weight percent to 35 weight percent reactive metallic fuel(s).

This combination of compositional components and concentrations is likewise recited in claim 15. None of the applied U.S. patents discloses this combination of features, as is evident from the Examiner's non-application of these documents against claims 1-40.

For these reasons, Applicants respectfully request reconsideration and withdrawal of the Section 102(b)/103(a) rejection of claim 41 and claims 42 and 45, which depend therefrom.

Obviousness-Type Double Patenting Rejection

The "instant claims" have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the respective claims of co-pending application no. 09/893,337 and 09/747,303.

This rejection is traversed.

The claims of the cited copending applications, when taken alone or in combination, fail to teach or reasonably suggest a melt-pourable explosive composition comprising: 30 weight percent to 70 weight percent organic binder(s) selected from the group consisting of mononitro aromatics and dinitro aromatics, the organic binder(s) collectively exhibiting a total energy of detonation lower than trinitrotoluene and collectively having a total

melting point in a range of 80°C to 115°C; 5 weight percent to 35 weight percent oxidizer(s); and 5 weight percent to 35 weight percent reactive metallic fuel(s), wherein the melt-pourable explosive composition becomes pourable and is remeltable into a pourable state in a range of 80°C to 115°C, as defined in claim 1.

For example, the claims of each of the co-pending applications are silent with respect to the use of 5-35 weight percent metallic fuels. Also, the claims of the co-pending applications are devoid of the requisite motivational teachings for modifying their respective compositions to include metallic fuels in the concentration claimed.

For these reasons, reconsideration and withdrawal of the obviousness-type double patenting rejection are respectfully requested.

Conclusion

In view of the foregoing, Applicants submit that the pending claims are allowable and that the application is in condition for allowance. Reconsideration of the application in view of this Amendment and Response, and its passage to issue are respectfully requested.

If, after reviewing the above, the Examiner believes any issues remain unresolved, the favor of an Examiner interview is requested and the Examiner is requested to contact the undersigned, by telephone, to schedule same.

This Response is being filed within three months of the date of the Office Action. Accordingly, a petition for extension of time and a petition fee have not been concurrently filed. If any fees are due in connection with the filing of this Response, please charge Deposit Account No. 01-0481 under Order No. 1082-496 and accept this paper as a petition for extension.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service on January 10, 2003 with sufficient postage as first class mail in an envelope addressed the Assistant Commissioner for Patents, U.S. Patent & Trademark Office, Washington, D.C. 20231.